Innovative Solutions for Reaching California's 2030 Energy Goals

Thursday, December 1, 2016 | Sacramento Convention Center









Opening Plenary 9:00 - 9:20

Welcome and Opening Remarks - Laurie ten Hope, Deputy Director, Energy Research & Development Division & Dr. Robert B. Weisenmiller, Chair, California Energy Commission

Panel Sessions 9:30 - 10:45

Session: Getting to Zero Net Energy **Buildings**

This session will explore the challenges of implementing ZNE in homes and commercial and municipal buildings. Each project uses a different ZNE strategy, but all will document the process, measure the outcomes and share the lessons learned with the building community.

Moderator: David Hungerford

Building Affordable Zero Net Energy Homes (Stockton, CA)

Presenters: Larry Brand & Rob Kamisky, Gas Technology Institute

Demonstrating a Cost-Competitive Zero Net Energy Community (Chino) Presenter: Garth Torvestad, ConSol

Innovative Strategies to Achieve Zero Net Energy in Grocery Stores (San

Presenter: Aaron Daly, Whole Foods

Francisco)

Session: Planning for a Clean and **Resilient Electricity System**

This session will highlight research on the pathways for the electricity system to reach California's clean energy goals and reduce greenhouse gas emissions, and share how one utility is using the information to make their system less vulnerable to climate impacts.

Moderator: Guido Franco

Low Carbon Energy Scenario Insights for a Robust Electricity System Presenter: Max Wei, Lawrence Berkeley

National Laboratory

Technology and Risk Assessment in GHG Mitigation Pathways

Presenter: Snuller Price, Energy and Environmental Economics. Inc.

Tackling Climate Vulnerability in San Diego

Presenters: Andrew Petrow. ICF & Brian

D'Agostino, SDG&E

Session: Advancing Field Safety and **Securing Power Systems**

This session will include presentations pertaining to power system electrical safety and fault detection. It will also include a presentation on pilot testing new communication architecture standards for power systems.

Moderator: Bryan Pham, SCE

Smart Grid Architecture Demonstrations

Presenter: Gabriel Leggett, SDG&E

High Impedance Fault Detection System

Presenter: Bryan Pham, SCE

Close Proximity Switching Presenter: Rudy Movafagh, PG&E

10:45 - 11:00 11:00-12:00

Thought Leaders Discussion

Leveraging Emerging Technology to Meet California's Advancing Energy Landscape

Mark Irwin, Director Contract Origination, Energy Procurement and Management, Southern California Edison Steve Malnight, Senior Vice President, Pacific Gas & Electric

Dr. Robert Weisenmiller, Chair, California Energy Commission

Moderated by: Cassandra Sweet, Reporter, Wall Street Journal

12:00-1:30

Session: Bringing Emerging Energy **Efficiency Technologies to Low Income** or Disadvantaged Communities

This session will explore projects and strategies that target disadvantaged communities and how the projects will help these communities and its occupants lower energy costs and provide other benefits, such as building improvements and access to education and training opportunities. This session will also discuss how best to reach this sector to ensure long lasting and sustainable benefits.

Moderator: Felix Villanueva

Maximizing Energy Efficiency in an **Existing Low-Income Mixed Use Residential and Commercial Building** (San Francisco)

Presenter: Cindy Wu, Chinatown Community Development Center and Stan Lew, RMW Architecture & Interiors

Retrofitting Multifamily Properties for **Sustainable and Persistence Savings** Presenter: Ram Narayanamurthy, Electric

Integrating Smart Ceiling Fans and Communicating Thermostats to Provide Energy Efficient Comfort

Presenter: Abhijeet Pande, TRC Companies Inc.

Power Research Institute

Discussants:

Sekita Grant, Greenlining Institute Samara Larson, Linc Housing

Lunch & EPIC Showcase

Session: Microgrids: Accelerating

This session will showcase five low carbon microgrids from design to construction with the goal of demonstrating the microgrids' ability to utilize local renewable resources, provide grid resiliency in emergency situations, and provide repeatable solutions that can be tailored for use in similar areas in California.

Moderator: Fernando Pina

Kaiser Richmond Microgrid Focusing on Resilient Hospital Services

Fremont Fire Station's **Low-Carbon Microgrid Maintaining Emergency Services**

Laguna Subregional Wastewater Treatment Plant Microgrid -

Presenter: Michael Day, Trane U.S., Inc.

Anchoring Downtown Berkeley's **Urban Energy Community**

Berkeley **Designing Santa Monica's Municipal** and Mixed-Use Advanced Energy

Presenter: Garrett Wong, City of Santa

Dr. Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences, Scripps Institution of Oceanography

Jonathan Woldemariam, Director of Electric Transmission and Distribution Engineering, San Diego Gas & Electric

1:30-2:45

Adoption of Renewables

Presenter: Jon Harding, Charge Bliss,

Presenter: Vipul Gore, Gridscape Solutions

Sustainable Water Treatment and **Ancillary Services**

Presenter: Timothy Burroughs, City of

District

Monica

Session: Enabling Distributed Energy Resources (DER) Growth

This session will include presentations on demonstrations to advance infrastructure for electric vehicles, high penetration of photovoltaics, and advanced power system protection.

Moderator: Frank Goodman, SDG&E

Direct Current (DC) Fast Charging Mapping

Presenter: Morgan Metcalf, PG&E **Modernization of Distribution System**

and Integration of Distributed **Generation and Storage** Presenters: Zoltan Kertay & Kirsten Petersen, SDG&E

Advanced Distribution Analytic Services Enabling High PV

Penetration Presenter: Christopher Clarke, SCE

2:45-3:00 3:00-4:15

Session: Increasing California's Water Supply through Energy Innovation

This session will explore novel technologies and strategies that provide an integrated approach to addressing both California's energy and water saving needs. Technologies and strategies that leverage both energy and water savings simultaneously provide a dual benefit to California and help maximize the potential value of investments.

Moderator: Brad Williams

California's Groundwater Pumping: The **Energy Perspective**

Presenter: Larry Dale, Lawrence Berkeley **National Laboratory**

Accelerating Drought Resilience Through Innovative Technologies Presenter: Laurie Park, Water Energy **Innovations**

Demonstrating a Low Energy Biofiltration System for Groundwater Contaminant Removal Presenter: Joon Min, BKT

Improving Water and Energy Efficiency in California's Dairy Industry Presenter: Theresa Pistochini, UC Davis

Break

Session: Creating Advanced Energy Communities

Local jurisdictions are increasingly looking to emerging energy technology solutions to help meet their community goals. This session will explore creative approaches being taken at the local levels to increase community-wide deployment of emerging energy technologies.

Moderator: Erik Stokes

Piloting an Integrated Energy Financing Platform for Fresno's **Blackstone Corridor**

Presenter: Neil Matouka, Local **Government Commission**

Creating a Zero Net Energy Farm in the Central Valley

Presenter: Russ Teall, Biodico, Inc. **Transforming Lancaster into a Zero Net Energy City**

Presenter: Richard Schorske, ZNE Alliance

From the Community Up: Building a Clean Energy Model for San Diego's **Encanto Neighborhood**

Presenter: Srinivas Sukumar, Groundwork San Diego-Chollas Creek

Session: Demonstrating System Simulation

This session will include presentations on demonstrations of new concepts for modeling, simulation, visualization and situational awareness to support power system operations.

Moderator: Julie Cerio, PG&E

Presenter: Greg Molnar, PG&E

Restoration Workplan and Resource Modeling

Power Factory Hardware Simulation Presenter: Christopher Clarke, SCE

Visualization and Situational Awareness Demonstrations Presenters: Aksel Encinas, SDG&E

Power System

4:15-4:30

Closing Remarks, Laurie ten Hope, Deputy Director, Energy Research & Development Division, California Energy Commission